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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,417

04/19/2006

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EXAMINER

BOYKIN, TERRESSA M

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

03/31/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,417	Applicant(s) FUJIMORI ET AL.	
	Examiner Terressa M. Boykin	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4-19-06</u> | 6) <input type="checkbox"/> Other: _____ |

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

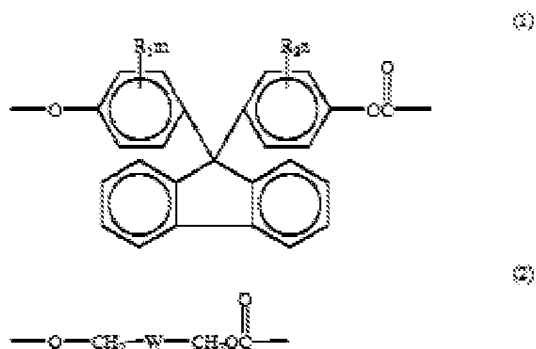
A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 3 are rejected under 35 U.S.C. 102(b) as being anticipated by USP 6355768 see abstract and cols. 1- 6 and claims.

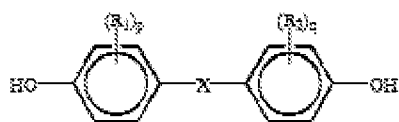
With regard to applicants claims 1 and 3 specifically, note **USP 6355768** claims a polycarbonate resin consisting essentially of structural units

of the structure *formula (1) and the structure formula (2)*,

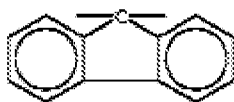


wherein a molar ratio of the structure formula (1)/the structure formula (2) is 70/30 to 5/95: wherein R₁ and R₂ are, each independently, a hydrogen atom, a halogen atom, an alkyl group having 1 to 20 carbon atoms, an alkoxy group having 1 to 20 carbon atoms, a cycloalkyl group having 6 to 20 carbon atoms, an aryl group having 6 to 20 carbon atoms, a cycloalkoxyl group having 6 to 20 carbon atoms or an aryloxy group having 6 to 20 carbon atoms and m and n are an integer of 0 to 4; and wherein **W** is a cycloalkylene group having 6 to 20 carbon atoms and 1 to 4 cyclo rings.

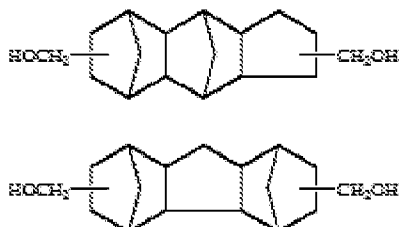
With regard to the dihydroxy components of applicant's **claims 2 and 3** note reference **USP 6316576** discloses a polycarbonate copolymer prepared by dihydroxy compounds prepared from moieties having the formula



wherein x may be



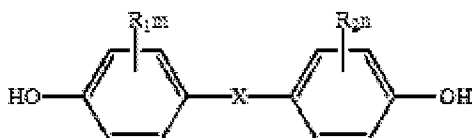
wherein the polycarbonate resin is obtained by pentacyclopentadecanedimethanol and carbonic acid diester which may be a mixture of



which would read on applicant's cycloalkylene group having 6-10 carbon atoms or a tetracyclodecane ring.

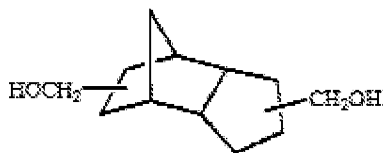
Note also **USP 6376641** discloses a process for producing an aromatic-aliphatic copolycarbonate and a process for producing the same which comprises polycondensation of an aromatic dihydroxy compound, such as 1,1-bis(4-hydroxyphenyl) cyclohexane, tricyclo(5.2.1.0^{2,6}) decanedimethanol, and a carbonic acid diester in a molten state under heating, wherein the carbonic acid diester has a chlorine content of 20 ppm or lower. The copolycarbonate has improved refractive index, balance of dispersion, and photoelastic constant while retaining high impact resistance, high heat resistance, and excellent hue.

The above-described aromatic-aliphatic copolycarbonate comprising polycondensing at least one aromatic dihydroxy compound represented by formula (III):



wherein X, R₁, R₂, m, and n are the same as defined above, tricyclo(5.2.1.0^{2,6})

decanedimethanol represented by formula (IV):



and a carbonic acid diester in a molten state under heating, wherein the carbonic acid diester has a chlorine content of 20 ppm or lower.

Each of the references discloses a copolymer of polycarbonate comprising a units represented by the formulas as disclosed. Since the disclosed amounts are expressed differently than the claimed mol% and molar ratio and thus may be distinct from those claimed, it is incumbent upon applicant(s) to establish that they are in fact different and whether such difference is unobvious. In view of the above, there appears to be no significant difference between the reference(s) and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

35 USC 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

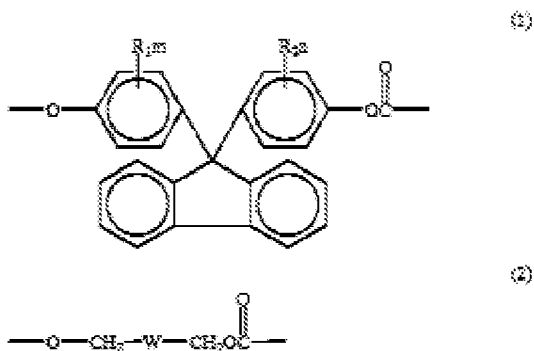
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

Claims 1- 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 6355768 see abstract and cols. 1- 6 and claims; or USP 6316576 see abstract, cols. 1- 4, and claims; or USP 6359103 see abstract, cols. 1- 5 and claims; and USP 6316576 see abstract, cols. 1- 4, and claims each in view of USP 6376641 see abstract, claims.

Particularly with regard to claims 1 and 3 note **USP 6355768** claims a polycarbonate resin consisting essentially of structural units of the structure *formula (1)* and the structure *formula (2)*,

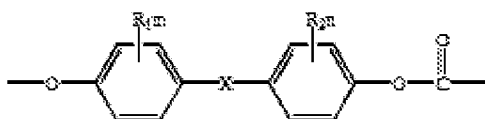


wherein a molar ratio of the structure formula (1)/the structure formula (2) is 70/30 to 5/95: wherein R₁ and R₂ are, each independently, a hydrogen atom, a halogen atom, an alkyl group having 1 to 20 carbon atoms, an alkoxy group having 1 to 20 carbon atoms, a cycloalkyl group having 6 to 20 carbon atoms, an aryl group having 6 to 20

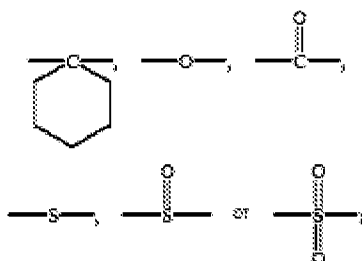
Art Unit: 1796

carbon atoms, a cycloalkoxyl group having 6 to 20 carbon atoms or an aryloxy group having 6 to 20 carbon atoms and m and n are an integer of 0 to 4; and wherein **W** is a cycloalkylene group having 6 to 20 carbon atoms and 1 to 4 cyclo rings.

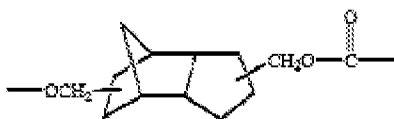
With regard to claims 1 and 3 note **USP 6359103** provides an aromatic-aliphatic copolycarbonate comprising a repeating unit represented by formula



wherein X represents



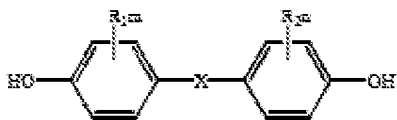
R_1 and R_2 , which may be the same or different, each represent a hydrogen atom, an alkyl group having 1 to 10 carbon atoms or a halogen atom; and m and n, which represent the number of substituent R_1 or R_2 , respectively, are each an integer of 0 to 4, and a repeating unit represented by formula (II):



The reference also provides a process for producing the above-described

Art Unit: 1796

aromatic-aliphatic copolycarbonate comprising polycondensing at least one aromatic dihydroxy compound represented by formula (III):



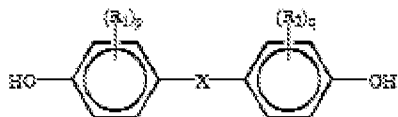
wherein X, R1, R2, m, and n are the same as defined above,

tricyclo (5.2.1.0^{2,6})decanedimethanol represented by formula (IV):

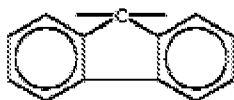


and a carbonic acid diester in a molten state under heating, wherein the carbonic acid diester has a chlorine content of 20 ppm or lower.

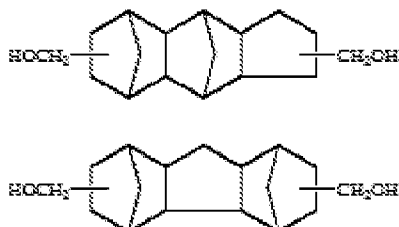
With regard to the dihydroxy components of applicant's **claims 2 and 3** note reference **USP 6316576** discloses a polycarbonate copolymer prepared by dihydroxy compounds prepared from moieties having the formula



wherein x may be



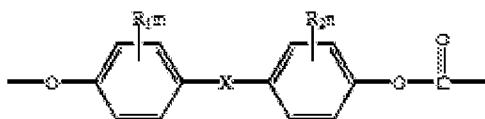
wherein the polycarbonate resin is obtained by pentacyclopenta decanedimethanol and carbonic acid diester which may be a mixture of



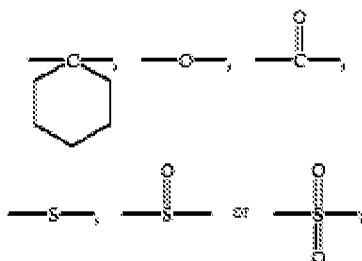
which would read on applicant's cycloalkylene group having 6-10 carbon atoms or a tetracyclodecane ring.

USP 6359103 provides

an aromatic-aliphatic copolycarbonate comprising a repeating unit represented by formula



wherein X represents

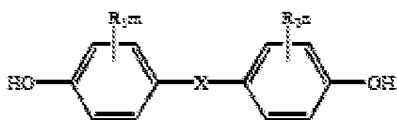


R_1 and R_2 , which may be the same or different, each represent a hydrogen atom, an alkyl group having 1 to 10 carbon atoms or a halogen atom; and m and n, which represent the number of substituent R_1 or R_2 , respectively, are each an integer of 0 to

4, and a repeating unit represented by formula (II):



The reference also provides a process for producing the above-described aromatic-aliphatic copolycarbonate comprising polycondensing at least one aromatic dihydroxy compound represented by formula (III):



wherein X, R1, R2, m, and n are the same as defined above,

tricyclo (5.2.1.0^{2,6})decanedimethanol represented by formula (IV):



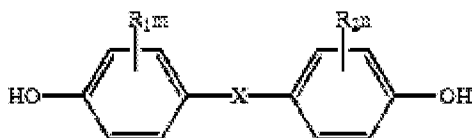
and a carbonic acid diester in a molten state under heating, wherein the carbonic acid diester has a chlorine content of 20 ppm or lower.

Note also **USP 6376641** discloses a process for producing an aromatic-aliphatic copolycarbonate and a process for producing the same which comprises polycondensation of an aromatic dihydroxy compound, such as 1,1-bis(4-hydroxyphenyl) cyclohexane, tricyclo(5.2.1.0^{2,6}) decanedimethanol, and a carbonic acid diester in a molten state under heating, wherein the carbonic acid diester has a chlorine content of 20 ppm or lower. The copolycarbonate has improved refractive

Art Unit: 1796

index, balance of dispersion, and photoelastic constant while retaining high impact resistance, high heat resistance, and excellent hue.

The above-described aromatic-aliphatic copolycarbonate comprising polycondensing at least one aromatic dihydroxy compound represented by formula (III):



wherein X, R₁, R₂, m, and n are the same as defined above, tricyclo(5.2.1.0^{2,6}) decanedimethanol represented by formula (IV):



and a carbonic acid diester in a molten state under heating, wherein the carbonic acid diester has a chlorine content of 20 ppm or lower.

Each of the references discloses a polycarbonate copolymer prepared from the same components as claimed by applicants except for the particular amounts and parameters, i.e. mol% or mole ratios, as claimed. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ particular amounts and/or parameters as known in the art, since it is well-established that merely selecting proportions and ranges is not patentable absent a showing of

Art Unit: 1796

criticality. *In re Becket*, 33 U.S.P.Q. 33 (C.C.P.A. 1937). *In re Russell*, 439 F.2d 1228, 169 U.S.P.Q. 426 (C.C.P.A. 1971). Generally, it is prima facie obvious to determine workable or optimal values within a prior art disclosure through the application of routine experimentation. See *In re Aller*, 105 USPQ 233, 235 (CCPA 1955); *In re Boesch*, 205 USPQ 215 (CCPA 1980); and *In re Peterson*, 315 F.3d 1325 (CA Fed 2003).

It is also noted that the formula (1) of both **USP 6316576**; and **USP 6355768** is specifically named and identical to that of applicant's formula (1) and that formula (IV) of **USP 6376641** is specifically named or identical to applicants disclosed formula (2). Thus, each of the references discloses the skeletal structural formula of the claimed invention, **USP 6316576 in view of USP 6376641** would have been obvious since such moieties are clearly named as having the most desirable qualities to there flexibility while maintaining the integrity of the ring(s) itself during copolymerization. When chemical compounds have "very close" structural similarities and similar utilities, without more a prima facie case may be made, *In re Wilder*, 563 F.2d 457 (CCPA 1957); i.e., obviousness may be based solely upon structural similarity (an established structural relationship between a prior art compound and the claimed compound, as with homologs). See *In re Duel*, 51 F.3d 1552, 1559 (Fed. Cir. 1995). The necessary motivation to make the claimed compound, and thus the prima facie case of obviousness, arises from the reasonable expectation that compounds similar in structure will have similar properties. *In re Gyurik*, 596 F.2d 1012, 1018 (CCPA 1979). Lastly, it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be

Art Unit: 1796

used for the very same purpose; the idea of combining them flows logically from their having been individually taught in the prior art. In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069,1072 (CCPA 1980); In re Crockett, 279 F.2d 274, 126 USPQ 186 (CCPA 1960).

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terressa M. Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday-Thursday 10-5:30 Friday (work at home).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/576,417
Art Unit: 1796

Page 14

/Terressa M. Boykin/
Primary Examiner, Art Unit 1796